

ABSTRACT OF THE DISCLOSURE

5 A method and system for assigning downlink and uplink channels to a mobile station registered with a base station, which uses an interference-sensing scheme and which provides improved reliability and performance over conventional schemes. Pilot tones transmitted by active mobile stations registered with the base station are turned off, each corresponding to an assigned downlink channel. Pilot tones being transmitted by the base station are turned off, each corresponding to an uplink channel assigned to one of the active mobile stations. The mobile station is paged from the base station with a pending traffic packet and requests access for a traffic packet. Interference sensing is performed at the base station to identify interference-free downlink channels and at the active mobile stations to identify interference-free uplink channels. A list of uplink channels identified as being acceptably interference-free is transmitted from each of the active mobile stations. A downlink traffic channel is assigned at the base station to the mobile station to receive the pending packets. An uplink channel is assigned to the mobile station at the base station. The channel assignments are transmitted from the base station to the mobile station. The downlink channels and uplink channels may be assigned to a plurality of mobile stations registered with the base station. There may be a plurality of base stations and the method may be performed successively for each of the plurality of base stations.

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